

REMARKS

The Office Action mailed July 8, 2003 has been reviewed and carefully considered. The Examiner's reconsideration is respectfully requested in view of the above amendments and the following remarks. Claims 1-27 are pending in the present application. Claims 1, 13 and 24 have been amended. New claims 26-27 have been added. No new matter has been introduced.

By the office action, claims 1, 3, 5, 9, 13, 15, 17 and 24 were rejected under 35 U.S.C. §102(b), as being clearly anticipated by U.S. Patent No. 6,092,578 to Machida et al. (hereinafter Machida).

Amended claims 1 and 13 recite, *inter alia*, a sealer comprising"a first jaw..."; a second jaw operatively aligned with the first jaw;" and "a heating device coupled to the first and second jaws for heating the jaws to a set temperature to enable a layered material to be welded together when the heated first and second jaws are in a closed position to contact the layered material."

Amended claim 24 recites, *inter alia*, a "method for sealing a package comprising... configuring a heat sealer by adjusting at least one of temperature, pressure and engagement time of a first and a second jaw;presenting layers of the package to be sealed into the sealer; and closing the jaws of the sealer to enable the layers of the package to be contacted and welded in a hands-free weld operation."

It is respectfully submitted that Machida fails to disclose or suggest the subject matter of the amended claims.

Machida involves a thin-film forming apparatus for forming a flat thin film by transferring a thin dielectric film to a semiconductor substrate. As such, it is clear from

the outset that Machida is in an entirely different technical field (i.e., semiconductor processing) from that of the present invention (i.e., heat sealing devices for product packaging). This results in a host of differences between Machida and the present invention on a fundamental level.

Firstly, as is well known in the art, thin-film processing typically requires extremely specific and controlled environmental conditions to prevent/control contamination during semiconductor processing. Typical thin-film forming methods are, for example, sputtering (which takes place in a vacuum chamber to prevent contamination) and chemical vapor deposition (which takes place in a chamber usually with an inert atmosphere).

Machida is no exception in its inherent need for controlled conditions in order for its disclosed apparatus and method to operate effectively. In fact, Machida not only discloses but claims an exhausting means for **vacuum-exhausting** a thin-film forming chamber. *See e.g., Col. 6, lines 7-9 and claims 1, 11 and 19.* In stark contrast, the present invention is a heat sealer which uses heat to enable material to be contacted and welded and requires no specific environmental conditions to achieve effective operation. In fact, in a preferred embodiment, the present invention is portable (e.g., is configured to be operated on a tabletop) and thus is inherently versatile and intended for use in diverse locations under various conditions. Any need for controlled environmental conditions to facilitate effective operation is not even an issue in the present invention.

Secondly, the basic function and objective of Machida is wholly different from that of the present invention. Machida involves **FORMING** layers (i.e., of a dielectric film) onto a wafer surface. In accomplishing this, only the wafer substrate is heated. *See*

e.g., Col. 6, lines 5-6. Then, the dielectric film and the heated wafer are brought into contact with one another. *See* e.g., Col. 6, lines 10-15. **That is, in Machida the use of heat is required to form a layer to begin with.** Quite simply, in Machida there is no layered material that is provided; instead, a layer is what is sought to be created.

In contrast to Machida, the present invention involves sealing a package together by essentially welding together layers of plastic material (e.g., polystyrene, PVC, etc.). **That is, the present invention PROVIDES layers of a plastic material;** the use of heat in the present invention is to weld the provided layers together, not to form the layers in the first place. Therefore, Machida does not, and indeed, cannot disclose or suggest at least wherein a layered material is enabled to be welded together, essentially as claimed in claims 1, 13 and 24.

The present invention achieves the welding via the use of two jaws which are *both* heated and movable relative to each other. The heated first and second jaws are then brought into contact with the material (e.g., plastic layers) to weld and seal the layered material together when the first and second jaws are in a closed position. In other words, it is the **jaws** that are heated first in the present invention; the **layers** of material intended to be welded together are then heated next as they are brought into contact with the heated jaws.

In stark contrast, the heating unit disclosed in Machida is used to heat only the actual substrate (wafer) onto which a thin film is to be deposited, as discussed above. It is apparent that Machida fails to disclose or suggest at least a first and a second jaw, and a heating device coupled to the jaws for heating them **both** to a set temperature to enable

a layered material to be welded when the heated first and second jaws are in a closed position to contact the layered material, essentially as claimed in claims 1, 13 and 24.

Overall, Machida makes no disclosure, express or implied, of an apparatus which uses heat to seal and weld layered plastic material, essentially as claimed in the present invention. Instead, Machida is simply concerned with attempting to provide a low-cost solution to forming a thin film on a *large-size* substrate (apparently in response to the increase in the size of wafers used in the manufacture of LSI's and liquid crystal panels).

Accordingly, claims 1, 13 and 24 are believed to be patentable and nonobvious over Machida for at least the reasons stated above. Claims 2-12 and 14-23 depend either directly or indirectly on claims 1 and 13, respectively, and as such, the dependent claims are believed to be patentable and nonobvious for at least the reasons given above for claim 1. Withdrawal of the rejection under 35 U.S.C. §102(b) is respectfully requested.

Next, claims 2, 4, 6-8, 10-12, 14, 16, 18-23 and 25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Machida in view of U.S. Patent No. 4,743,333 to Forthmann (hereinafter Forthmann).

The Examiner has cited Forthmann and alleges that Forthmann teaches a temperature, pressure and duration control system which would be obvious to employ in Machida.

The rejection of claims 2, 4, 6-8, 10-12, 14, 16, 18-23 and 25 is based, in part, on the Examiner's contention that Machida discloses or suggests the feature of claims 1 and 13 and 24 from which such claims respectively depend. Without addressing the specific rejections, however, it is clear that the combination of Machida with Forthmann is legally deficient since, at the very least, as explained above, Machida does not disclose or

suggest the features of claims 1, 13 and 24 from which claims 2, 4, 6-8, 10-12, 14, 16, 18-23 and 25 depend.

Accordingly, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. §103(a) and early allowance of pending claims 1-27 on the merits.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that claims 1-27 are patentable and nonobvious over the cited references. Consequently, the Applicant respectfully requests reconsideration and withdrawal of the rejections and allowance of the application. Such early and favorable action is earnestly solicited.

A check for \$18.00 is enclosed to cover the fee due for the two (2) new dependent claims added herewith. In the event that any additional fees or charges are required at this time in connection with the application, they may be charged to applicant's representatives Deposit Account No. 50-1433.

Respectfully submitted,

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